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Green Power Programs in Washington: A Report to the Legislature

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A Report to the Legislature

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Executive Summary

RCW 19.29A.090, signed into law in 2001, directed 16 of Washington's electric utilities to offer a voluntary "qualified alternative energy resource" (essentially an electricity product powered by green resources) by January 2002. The statute calls for the utilities to report annually on the progress of these voluntary green power programs to the Department of Community, Trade and Economic Development and the Washington Utilities and Transportation Commission (collectively referred to as the "agencies"). This is the second reporting year. The following are key findings:

- All 16 utilities that fall under the jurisdiction of the statute have submitted data for this report. All but one utility reported green power sales. One additional utility with a green power program contributed data voluntarily.

- Between January and September 2003, customers purchased 39,390,016 kilowatt-hours (kWhs), or 4.5 average megawatts (aMW), of green power through voluntary green power programs. Annualized, this represents a doubling of 2002 green power program sales.

- Wind-powered electricity represented 95.8% of these green power sales, or 37,731,796 kilowatt-hours (4.3 aMWs).

- 17,795 utility customers in Washington are participating in these voluntary utility programs. This is a 46% increase in customer participation since 2002.

- Apart from these green power programs, electric utilities in Washington reported selling 17 aMW of wind power and 25 aMW of electricity generated from landfill gas to all of their retail customers through their standard power sales in 2002. The agencies project that 2003 retail sales in Washington of wind-generated electricity from combined green power program sales and standard power sales will approach 23 aMW, or 203,872,000 kWhs and that landfill gas sales will continue at the current annual volume of 25 aMW. This represents a shift in the resource mix for Washington utilities that, in 2000, sold no electricity powered by wind and one-third as much electricity powered by landfill gas.

Introduction

Engrossed House Bill 2247, enacted in 2001[1], required electric utilities in Washington State to offer their retail customers an option to purchase qualified alternative energy resources -- often referred to as "green power."[2] This legislation also mandated that between 2002 and 2012 the electric

[1] L2001, ch. 214.

[2] The requirement is codified in RCW 19.29A.090. A "qualified alternative energy resource" is electricity produced from generation facilities fueled by wind, solar energy, geothermal energy, landfill gas, wave or tidal action, gas produced during the treatment of wastewater, qualified hydropower or biomass. RCW 19.29A.090(3).

utilities[3] must annually report details of their green power programs to the agencies. Upon receipt of the data, the agencies must annually prepare and submit a report to the Legislature. This report provides an update on implementation of green power programs using complete data for 2002 and January through September data for 2003. It provides a short overview of each utility's program, participation levels, program revenues and electricity sales. It also briefly summarizes comments from Washington's utilities regarding their programs.

To facilitate the utility reporting process, the agencies surveyed 17 consumer-owned and investor-owned electric utilities in the state. All 16 utilities which were required to respond did so and one small utility, Orcas Power and Light, responded voluntarily.

Background

The statute gives utilities two options to provide qualified alternative energy resources: green power itself or green tags/credits. An idea first promoted by power marketers in the mid-1990s, the green tags are a type of currency used in the electricity industry to represent the environmental and social benefits of clean electricity production. They are also sometimes called "tradable renewable energy certificates" or "renewable energy credits." A green tag with the environmental attributes of a renewable resource is separated from the electricity produced and is sold as a distinct product. One product is unlabeled electricity; the other product (the green tag) represents the environmental attributes equivalent to the amount of renewable electricity produced.

The Bonneville Environmental Foundation (BEF)[4] began to sell green tags in 2001 that represented the attributes of a mix of wind, solar, and other renewable resources to wholesale and retail customers. For example, a green tag broker, such as BEF, buys 1,000 megawatt-hours of wind tags from the owner of a wind farm and pays the incremental difference between the market price of any power and the market price of the specified renewable power, in this case, wind. The wind farm owner, in turn, assigns 1,000 megawatt-hours of green tags to BEF, and then sells 1,000 megawatt-hours of generic electricity into the wholesale electricity market. The environmental attributes of the 1,000 megawatt-hours of wind electricity transfer with the green tags to the utility or retail customer purchasing these tags from BEF.

Buying green tags has a similar effect as buying green power (e.g., wind or solar power) except that the purchaser does not need to schedule or transmit the green power to a specific distribution utility or customer. Puget Sound Energy, Cowlitz County PUD and Snohomish County PUD sell green tags for their green power programs. In addition to utility-sponsored programs, 63 customers in the state have bought a total of 568 tags (representing 568 megawatt hours) directly from BEF and spent a total of $11,360.

In 1999, the Bonneville Power Administration BPA began to sell a resource-specific electricity product, referred to as Environmental Preferred Power or EPP, to wholesale customers. EPP included a mix of renewable resources except large-scale hydropower. Some utilities in Washington, particularly a handful of small electric utilities, began to purchase EPP prior to the establishment of green power programs and continue to purchase it. This product ensured that BPA's utility customers had ready access to a specific green power product should they need it.

[3] Small (or rural) utilities were exempted. A "small utility" is any consumer-owned utility with 25,000 or fewer electric meters in service, or that has an average of seven or fewer customers per mile of distribution line. RCW 19.29A.010(30).

[4] The Bonneville Environmental Foundation was founded in 1998 to support watershed restoration projects and develop new sources of renewable energy. It is a not-for-profit organization that markets green power products to utilities, government agencies, businesses, and individuals.

Many Washington utilities offer a "block" option to participants in their green power programs. A "block" of power refers to a specific number of kWhs aggregated into a block; the participant pays a flat rate for this block of power. Customers have the option of buying one or many blocks of green power each month. For example, Snohomish County PUD sells blocks consisting of 150 kWhs of BEF green tags for $3/block.

Overview of Survey Results

All of the responding utilities had green power programs in 2003. All programs appear active except one. Table 1 shows a summary of state-level results for both 2002, the first year of the programs, and the first nine months of 2003. Participation, revenue and sales within the state have each increased in the second year.

Table 1 Washington State Summary Data

	2002	YTD 2003 (through approx. September)	2003 Estimate	Percent change from 2002 (based on 2003 estimated sales)
Total kWh sales of green power	27,918,328	39,390,016	56,755,788	103%
Total revenue from green power programs	$632,282	$861,671	$1,214,127	92%
Total number of participants	12,196	17,795	17,795	46%

The program descriptions are summarized in Table 2. The programs are offered to all residential, commercial and industrial customers. The most common option offered by the utilities to their customers is the purchase of a block or multiple blocks of qualified alternative power. These blocks vary in price, ranging between $1.50-$3.50 per 100 kWhs. PacifiCorp is the one utility that reduced its price from $2.95/block in 2002 to $1.95/block in 2003.

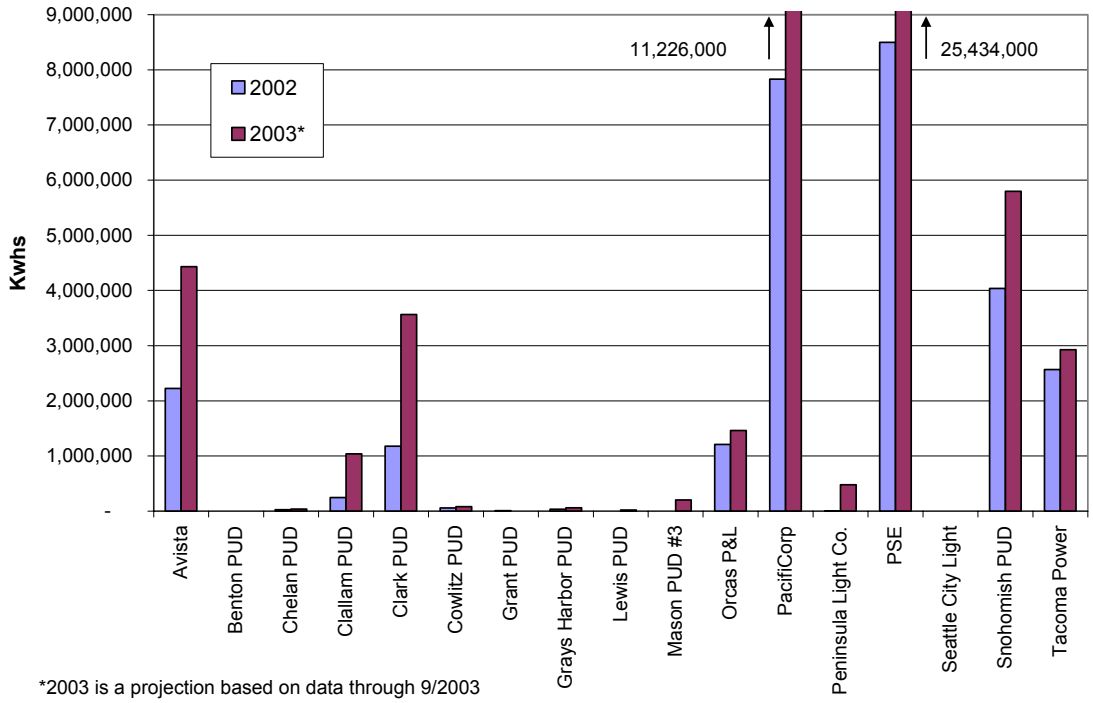
Table 2 Description of Utility Green Power Programs

Utility Name	Program Name	Program Description
Avista	Buck a Block	$1/55 kWh block of wind from Stateline Wind
Benton PUD	Green Power Program	Contributions of $1/month sought for Klickitat Landfill gas power
Chelan	SNAP (Sustainable, Natural, Alternative Power)	Contributions of $2.50-7.50/month pay for qualified locally-generated power
Clallam	No name	Resource mix with Klickitat Landfill gas sells for rate of 6.9 cents/kWh
Clark	Green Lights	$1.50/100 kWh block of Green Tags from BPA
Cowlitz	Renewable Resource Energy Supplement	$2/100 kWh block of BPA Environmentally Preferred Power
Grant	Alternative Energy Resources	$2/100 kWh block from Nine Canyon Wind Project
Grays Harbor	Green Power Program	$3/100 kWh block from Nine Canyon Wind Project
Lewis	Green Power Program	$2/100 kWh block from Nine Canyon Wind Project
Mason PUD 3	Mason Evergreen Power	$2/100 kWh block from Nine Canyon Wind Project

Orcas Power and Light Cooperative	Go Green	$3.50/100 kWh block which included 106,676 kWhs of locally-generated renewable energy supplemented with BPA Environmentally Preferred Power
PacifiCorp	Blue Sky	$1.95/100 kWh block of wind power
Peninsula	Green Choice	$2.80/100 kWh block of BPA Environmentally Preferred Power
Puget Sound Energy	Green Power Plan	$2/100 kWh block of Bonneville Environmental Foundation Green Tags
Seattle City Light	Seattle Green Power	Monthly or one-time contributions, used to purchase locally-generated renewable energy
Snohomish	Planet Power	$3/150 kWh block of Bonneville Environmental Foundation Green Tags
Tacoma Power	EverGreen Options	2 cents/kWh increments for BPA Environmentally Preferred Power

Ninety-five percent of the power offered in these programs is wind power. The total quantity of wind-generated power sold through these programs between January and September 2003 was 37,731,796 kWhs. Additionally, the programs sold 778,514 kWhs of electricity generated from landfill gas, 661,678 kWhs of endorsed hydro-electricity and 218,028 kWhs of solar electricity.

Figure 1 – Green Power Program KWh Sales



*2003 is a projection based on data through 9/2003
Note: Benton PUD and Seattle City Light both have contribution-based programs and were unable to provide sales data.

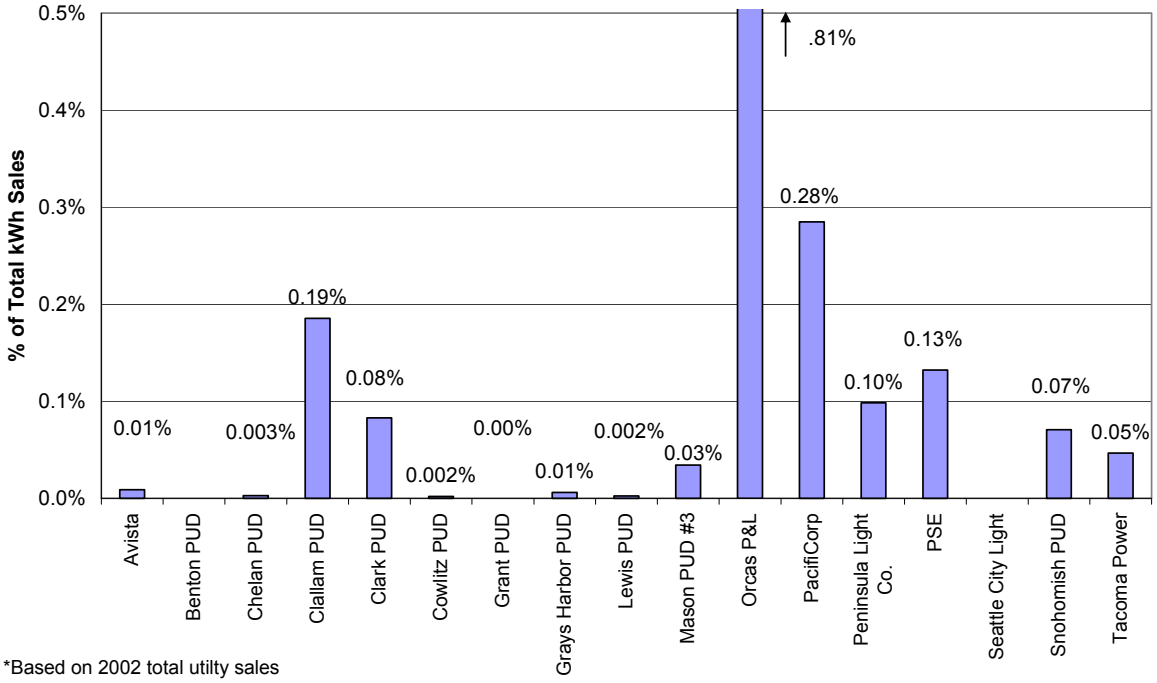
Figure 1 provides the amount of green power sold by each of the utilities in the first two years of the program. To compare data from the two years, the agencies have estimated[5] the total

[5] Actual data is available through September 2003. The remaining three months were estimated based upon sales continuing at current levels.

customer purchases of green power through these programs in 2003 to be 56,755,788 kWhs, or 6.48 aMW. It may appear that some utilities have no green power sales. Actually, Grant County PUD is the only utility that is reporting no customers, no sales and no revenue from a specific green power program. Seattle City Light and Benton County PUD operate a contribution-based program and are unable to provide data on actual kWh sales. A few utilities report a small volume of sales that are hard to discern in Figure 1.

Figure 2 provides the green power sales as a percentage of total utility retail sales to indicate relative activity at each utility and the resulting sales to customers for different types of programs. Orcas Power and Light and PacifiCorp have the two highest green power sales penetration rates. Each of these utilities initiated their programs voluntarily before the law was enacted.

Figure 2 Green Power Sales as a Percent of Total Utility Sales* 2003



*Based on 2002 total utilty sales
Note: Benton PUD and Seattle City Light both have contribution-based programs and were unable to provide sales data.

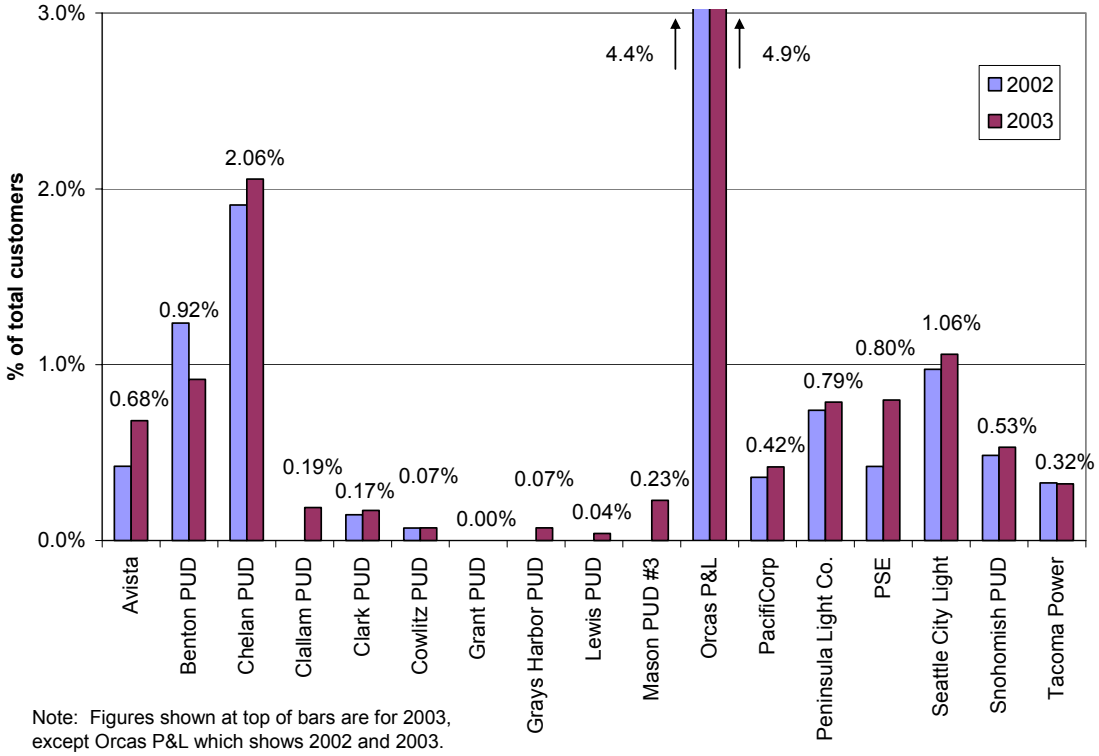
Consumer-owned utilities often purchased more new renewable power than they sold through their green power programs. In that situation, the power was rolled into their general resource mix and sold to all of the utility's customers. This report has attempted to track only the purchases made for the green power programs. However, over one dozen consumer-owned utilities, including six that are exempt from the green power statute, had non-hydropower renewable resources in their standard power supply in 2002. In addition to green power program sales occurring in 2003, the fuel mix disclosure data indicates that these utilities sold 17 aMW of wind power and 25 aMW of electricity generated from landfill gas in 2002 to all of their Washington retail customers through regular power sales.[6]

[6] Fuel Mix Disclosure Process, facilitated by the Department of Community, Trade and Economic Development, spring 2003, http://www.energy.cted.wa.gov/FuelMixDisclosure.htm.

Based on the preceding information, the agencies estimate that Washington utilities will sell 23 aMW (203,872,000 kWhs) of wind-generated electricity in 2003 through a combination of green power programs and regular power sales. This represents a shift in the resource mix for Washington utilities that, in 2000, sold no electricity powered by wind to their retail customers.

Figure 3 indicates the level of customer participation by utility as a percentage of total customers. Orcas Power and Light Company has the highest participation rate at 4.9%, followed by Chelan County PUD at 2.06%, Seattle City Light at 1.06% and Benton County PUD at 0.92%. Statewide, there are 17,795 customers voluntarily making the decision to purchase these differentiated green power products in the second year of the programs.

Figure 3 Customer Participation Rate in Green Power Programs 2002-2003



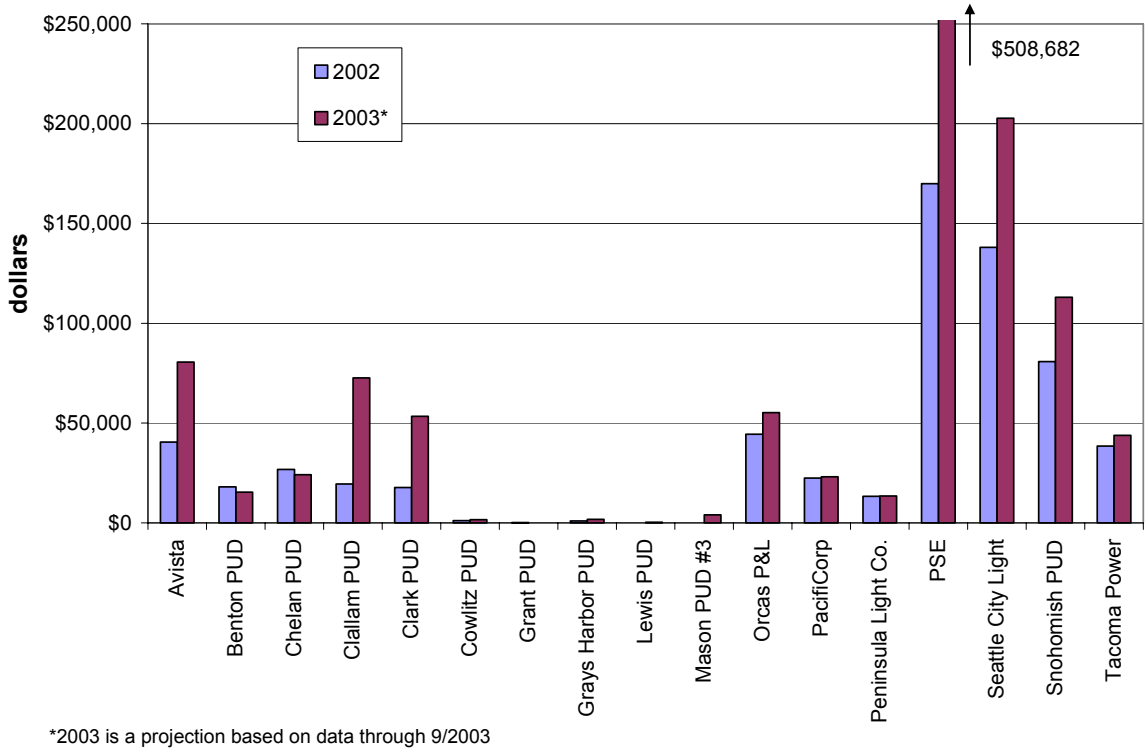
Note: Figures shown at top of bars are for 2003, except Orcas P&L which shows 2002 and 2003.

Figure 4 reports annual revenues from green power sales by utility for 2002 and 2003, indicating that nine of the programs have grown from year one to year two. Total 2003 revenue from Washington ratepayers' purchases and contributions of green power from these optional programs is estimated at $1,214,127, this is almost double the $632,282 of revenue in 2002. Actual reported revenue for January through September (or through August for a few utilities) of 2003 was $861,671.

This revenue figure does not reflect the total cost of the electricity. Instead, it typically reflects the above-market cost of the renewable resource power and frequently includes the costs of

program administration and marketing. The notable exception to this is that Clallam County PUD charges its customers one inclusive rate for its green power product. Therefore, Clallam County PUD's program revenues do represent the total cost of the electricity, not just the incremental cost.

Figure 4 Revenues from Utility Green Power Programs for 2002 and 2003



*2003 is a projection based on data through 9/2003

Comments of Utility Representatives

Utility respondents were asked if they had any comments they would like to share with policy-makers regarding this program. The following are summaries of their comments:

- Include renewable resources in the total utility system resource mix instead of in a separate green power program so that all customers can share the costs and benefits.
- Include some or all of green power program costs in general rates.
- Green power program participants feel penalized by having to pay more for doing the right thing to support a cleaner environment and request that all customers share the responsibility.

Conclusion

These voluntary programs resulted in 39,390,016 kWhs (4.5 aMWs) of green power sales in Washington for the first nine months of 2003. Utilities sold 37,731,796 kWhs of wind power, 778,514 kWhs of electricity generated from landfill gas, 218,028 kWhs of solar-electricity, and 661,678 kWhs of endorsed hydro-electricity through their programs. If these sales continue for

the remainder of the year, estimated sales for 2003 will equal 6.48 aMW and will result in a doubling of 2002 program sales.

For further details on an individual utility's program, see the Appendix of the 2002 Green Power Report at: www.energy.cted.wa.gov under "Publications."